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**METHOD FOR PRODUCING NOVEL DNA SEQUENCES  
WITH BIOLOGICAL ACTIVITY**

Abstract of the Disclosure

5 A method of obtaining an oligonucleotide capable of carrying out a  
predetermined biological function. A heterogeneous pool of oligonucleotides,  
10  $x + y + z$  nucleotides in length, is first generated. Each oligonucleotide has a 5'  
randomized sequence,  $x$  nucleotides in length, a central preselected sequence,  $y$   
nucleotides in length, and a 3' randomized sequence,  $z$  nucleotides in length. The  
resulting heterogeneous pool contains nucleic acid sequences representing a  
15 random sampling of the  $4^{x+z}$  possible sequences for oligonucleotides of the stated  
length. A random sampling of the heterogeneous pool of oligonucleotides is  
introduced into a population of cells that do not exhibit the predetermined  
biological function. The population of engineered cells is then screened for a  
subpopulation of cells exhibiting the predetermined biological function. From that  
subpopulation of cells is isolated an oligonucleotide containing the preselected  
sequence and capable of carrying out the predetermined biological function.